

### REMARKS

Claims 1-20 are pending. By the foregoing amendment, claims 1, 2 and 15 have been amended. Claims 21 - 58 have been added. Support for the added claims can be found at page 5, lines 4-14 (claims 21-24); page 7, lines 5-17 (claims 25-32); page 7, lines 23-27 (claims 33-42); page 8, lines 5-10 (claims 42-46); Example 1 (claims 53-58); Example 2 (claims 49-52); Example 6 (claims 47-48); and elsewhere in the specification. It is respectfully submitted that the amendments and added claims do not introduce any new matter and favorable consideration is requested.

#### Rejection Under 35 U.S.C. § 103(a)

Claims 1-5 and 9-20 have been rejected under 35 U.S.C. § 103(a) as obvious over Isogaya et al. alone or in view of Kobylinski. This rejection is respectfully traversed.

Independent claim 12 recites, among other limitations, a large pore support, specifically “a first porous structure with a first pore surface area and a first pore size of at least 0.1  $\mu\text{m}$ .” These are the same limitations in non-rejected claim 6. Neither of the cited references suggests a large pore support. Accordingly, applicants respectfully request withdrawal of the rejection of claim 12.

Similarly, claim 16 recites a catalyst in which “at least 50% of the catalyst's pore volume is composed of pores in the size range of 0.3 to 200 microns.” Again, the cited art does not teach or suggest a catalyst with such large pores.

Isogaya et al. teach away from residence times of less than 0.1 seconds. A col. 4, lines 64-66, Isogaya et al. state “If the residence time is less than 0.1 second, methane decomposition is

insufficient and carbon is apt to be deposited.” Thus, persons skilled in the art, after reading the teachings of Isogaya et al., would know to avoid residence times of less than 0.1 second since they would have expected insufficient methane decomposition and carbon deposition. As shown in the examples, applicants have discovered a method of steam reforming at residence times of less than 0.1 that have good hydrocarbon conversions without carbon deposition. A method proceeding contrary to the teaching in the prior art is proof of nonobviousness. See MPEP 2145.X.D.3. Furthermore, Kobylinski does not suggest residence times below 0.1 seconds. In summary, the cited art does not teach or suggest residence times below 0.1 second, and, in fact, teaches away from such short residence times.

#### Obviousness-Type Double Patenting

Claims 1-20 are rejected under obviousness-type double patenting in view of U.S. Patent No. 6,284,217. A Terminal Disclaimer is attached. Accordingly, withdrawal of this rejection is requested.

Conclusion

If the Examiner has any questions or would like to speak to Applicants' representative, the Examiner is encouraged to call Applicants' attorney at the number provided below.

Respectfully submitted,

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